

August, 1985

PAARA

GRAPHS

Featuring:

The first in a
discussing the
of switching
Plus other



series of articles
various qualities
power supplies.
interesting news.

**THE OFFICIAL NEWSLETTER
OF THE PALO ALTO AMATEUR
RADIO ASSOCIATION**

AND

THE MENLO PARK C.D. AMATEUR RADIO CLUB

<p>PAARAgaphs is the official newsletter of the Palo Alto Amateur Radio Association & the Menlo Park Civil Defense Radio Club</p>

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Club Net 147.45 MHz, Monday at 8:30 p.m. local time

PAARA Policies

Membership in PAARA is 6 dollars per calendar year (payable in January) which includes a subscription to PAARAgaphs. Make payment to PAARA, P.O. Box 911, Menlo Park, CA 94026.

August meeting: Friday the 2nd.

Speaker: W B G O M L
(B:11)

Topic:

PUBLIC SERVICE
+
THE RECENT FIRE'S,

Editors note -

Lets welcome **Ken Deuker** on as
co-editor. and good work Ken on this issues
front cover.

President's notes

The PAARA flea market at Foothill College is coming up soon, on August 10th. PAARA will need help from the members in making this activity a success. We will be recruiting volunteer help at the next meeting. Simple items like traffic control and clean up are always needed, as well as selling refreshments.

The Lexington - Soda Springs fire caught the attention of all of us in the area. One only had to look in that direction to see the clouds of smoke that covered the area near San Jose for several days. I was one of those recruited to help with the radio communications (partly due to my knowledge of packet radio), and spent Tuesday evening, July 9, operating packet at Vasona base camp. It was a very interesting experience, and it became even more so when I changed to a different function, that of riding along with a weather and fire observer in the active fire area.

The next weekend we were pleased to see cooler weather from remains of some tropical storms bring some higher humidity and even sprinkles of rain to the area. While we all celebrated the effect on the fires in our state, some amateurs noticed another effect from the storm fronts across the Pacific. Over the weekend, there was quite an opening from the Northern California area to Hawaii. Several operators worked Hawaii on two meters, and there was at least one report of hearing the 432.075 MHz beacon from there. Unfortunately, I was not on to do either.

As you may have noticed from recent issues, PAARAgaphs has a continuing need for material for publication. Some has arrived recently, but even more is needed. If you have something that you think should be published, please write it up and send it to the editor.

Charge per Channel (**WOW**)

The British government is trying to find out whether more efficient use of radio frequencies can be achieved by charging for them. CSF international has been commissioned to carry out a study into pricing radio spectrum in the U.K. The area of study includes the questions of whether there are any benefits to be had from bringing market forces and the price mechanism to the area of spectrum management. Also, another question to be answered is whether it is technically and administratively feasible within a regulatory framework to charge for use of the frequency. A separate contract will be awarded for another study of spectrum usage.

OLD VALVE INVENTORY

A "Transmitting tube museum" with the objective of collecting, preserving and displaying tubes manufactured in yester-years has been set up as a new venture. It is open to interested individuals or groups. Displays are available for transport for use at Hamfests, electronic shows, or related events.

The purpose of the venture is to preserve the rapidly disappearing old transmitting tubes of years past for future generation hams and professionals to see, study and admire.

Aug WorldRadio outlines the project in detail and recommends contributions of old tubes to the museum in Crescent City, Ca.

CONTINUED →

This should be of concern for all amateurs worldwide. We have always accepted that radio frequencies should be free but with increased usage some special interest may want to purchase it from us. This may be the hobby's greatest problem in the future.

WHAT IS A SWITCHER???

Switching power supplies are getting to be so common place, it is unusual to go to a flea market without numerous examples of this modern electronic art being offered at bargain prices. One of the best ways of describing the switching power supply might be to locate its place in history. But first let's briefly think about the about the function of a power supply in the broadest possible terms. Typically, we have an electronic device which performs some useful function such as a transmitter, receiver, measuring, or analysis device, such as a voltmeter or spectrum analyzer, etc.

In order to operate, this device needs power delivered to it at various voltage and current levels, (i.e., 5 volts at 5 amps, 300 volts at .001 A etc). In general, we have conveniently available energy in some form, such as 115 VAC, but typically not available in the exact form required by the device.

This was solved in early radio receivers by having "A" batteries, "B" batteries, etc... A good ham radio way of thinking about this problem is that we need an impedance matching device to match the impedance of the "source" to the impedance of the "load".

At this point we should define a branch in our thinking and create two classes of power supplies: unregulated and regulated. The former we will discuss briefly and then discard. This class of supply would typically contain a 60 hertz transformer, with a primary winding matching the impedance of the 120 volt commercial mains, and a secondary matching the needs of the load. For electronic applications, the secondary probably contains rectifiers and a capacitor to smooth out the ripple. Unhappily, modern electronic devices typically find such simple supplies inadequate for their needs. A transmitter, in order to transmit a pure signal, low in spurious signals, needs a power source which is very low in ripple. Also many modern electronic devices (such as transmitters) require "stiff" voltage sources, that is sources that maintain a very steady voltage in the presence of large and rapid changes in load current. "Stiffness" against line or source transient voltages might also be an important new performance parameter, depending on the application.

In any case, these new requirements lead us to a new class of power supplies requiring **regulation**--In order to finally get to the heart of the matter, we will further divide the class of regulators into linear supplies and switching supplies. One of the primary goals of the switcher is to overcome the "lossy" property of the linear supply and replace it with a ~~lossless~~ power transformation capability.

For a further discussion of this subject check next month's article titled:

"Inside the Switcher."

de WA6LNV

Editors note -

The following article is re-printed from the July 29, 1985 Peninsula Times Tribune. I think this sort of coverage is very beneficial for amateurs.

How ham radio enthusiasts may listen in on shuttle

Times Tribune staff

Ham radio operators interested in listening in on communications between astronauts aboard the space shuttle Challenger and the National Aeronautics and Space Administration can tune in on a channel offered for the first time by the NASA Ames Research Center's Amateur Radio Club.

The communications between the astronauts and NASA ground control in Houston will be broadcast on the Peninsula on VHF band frequency 145.580 MHz, according to Patty Winter, a spokeswoman for the radio club.

The communications should be continuous 24 hours a day because two shifts of astronauts will be working around-the-clock on the seven-day Spacelab 2 mission.

The flight was scheduled to lift off early this afternoon.

Most scanners on the Peninsula should be able to pick up the frequency.

Two of the astronauts aboard the shuttle also are licensed amateur radio operators. If they have time, they may talk directly with ground-based ham operators during the flight.



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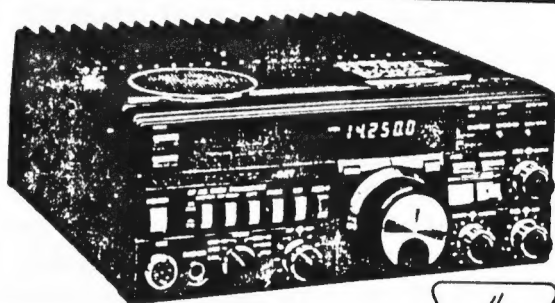
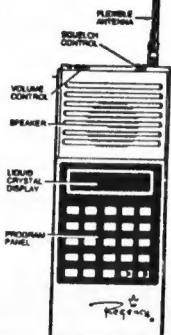
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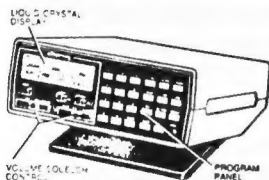
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Ten Meter Beacons

While conditions remain spotty at best, the Ten Meter activity is beginning to stir occasionally. The Ten/Ten gang hangs in there no matter what propagation does. The following CS beacons may help your beam direction.

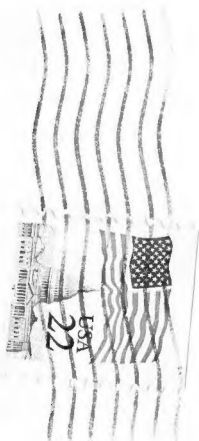
28,200khz	LU2EB	28,255	LU1UG
28,202.5	ZS6VHF	28,257.5	DKOTE
28,207.5	WD4HES	28,260	VK5WI
28,209	WA110B	29,265.5	PY5EDX
28,210	3B8MS	28,270	ZS6PW
28,215	GB3SX	28,272.5	TU2ABJ
28,217.5	VE2TEN	28,277.5	DF0AAB
28,220	HB2BHA	28,280	YV5AYY
28,225	VE8AA	28,284	KA1YE/B
28,227.5	EA6AU	28,285	VU2BCN
28,230	ZL2MHF	28,285	VP8ADE
28,235	VP8BA	28,290	VE6TEN
28,237.5	LA5TEN	28,293	LU2FFV
28,240	OA4CK	28,295	W3VDB
28,240	KA9NEP	28,299	P8Y2AMI
28,245	A9IC	28,302.5	ZS1STB
28,247	ZS1CTR	28,315	ZS6DN
28,250	ZS1ANB	28,325	DF0THD
28,252.5	VE3TEN		

Thanks to the JUL World Radio listing.

Patty in Public Service

The Sunnyvale ARES group received a service award, PIX, and an article in WORLD RADIO. PARRA "Patty Winter" is there in the group. See article, Pg 16. in AUG WorldRadio.

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